

WHAT IS CLAIMED IS:

1. A developing device that is detachably attached to a main casing of an image forming apparatus, comprising:

a developing agent container that contains a developing agent;

a developing agent carrier that carries the developing agent;

a supply device that is disposed facing the developing agent carrier and supplies the developing agent stored in the developing agent container to the developing agent carrier, the developing agent carrier and the supply device disposed below the developing agent container when the developing device is mounted in the main casing of the image forming apparatus; and

a first wall that is disposed between the developing agent container and the supply device and covers an upper portion of the supply device when the developing device is mounted in the main casing of the image forming apparatus.

2. The developing device according to claim 1, wherein the first wall is disposed so as to store the supply device within a plane of projection in a vertical direction of the first wall when the developing device is mounted in the main casing of the image forming apparatus.

3. The developing device according to claim 1, wherein the first wall is disposed so as to produce a flow of the developing agent by moving the developing agent between the first wall and the supply device along with a movement of the supply device, when the developing device is mounted in the main casing of the image forming apparatus.

4. The developing device according to claim 1, wherein the first wall is disposed near the supply device.

5. The developing device according to claim 1, further comprising:

a layer thickness regulating member that regulates a thickness of the developing agent carried on the developing agent carrier at a downstream side from a facing position of the developing agent carrier and the supply device with respect to a movement direction of the developing agent carrier; and

a second wall having a first end disposed near a facing position of the developing agent and the layer thickness regulating member over the layer thickness regulating member when the developing device is mounted in the main casing of the image forming apparatus.

6. The developing device according to claim 5, wherein the first end of the second wall inclines downward and a second end of the second wall inclines upward.

7. The developing device according to claim 1, wherein the developing agent carrier is a developing roller, the supply device is a supply roller, and the developing roller and the supply roller are disposed such that an angle formed by a first line horizontally passing through a center of rotation of the developing roller and a second line connecting the center of rotation of the developing roller and a center of rotation of the supply roller is greater than or equal to 45° , when the developing device is mounted in the main casing of the image forming apparatus.

8. The developing device according to claim 1, wherein the developing agent is a toner having substantially spherical particles.

9. The developing device according to claim 1, wherein the developing agent has a packed bulk density greater than or equal to 0.646 g/ml at an initial use.

10. The developing device according to claim 1, further comprising an agitating member that is provided in the developing agent container and agitates the developing agent, and

wherein the agitating member moves, at the closest position to the developing agent carrier, in the same direction as a flow of the developing agent produced near the developing agent carrier by the movement of the developing agent carrier.

11. The developing device according to claim 1, wherein the developing agent carrier and the supply device are urged into contact with each other at the facing position, and move in opposite directions at the contact position.

12. A developing device that is detachably attached to a main casing of an image forming apparatus, comprising:

a developing agent container that contains a developing agent;

a developing agent carrier that carries the developing agent;

a supply device that is disposed facing the developing agent carrier and supplies the developing agent stored in the developing agent container to the developing agent carrier, the developing agent carrier and the supply device disposed below the developing agent container when the developing device is mounted in the main casing of the image forming apparatus; and

a first means that prevents a weight of the developing agent contained in the developing agent container from directly acting on the supply device.

13. The developing device according to claim 12, further comprising:

a layer thickness regulating member that regulates a thickness of the developing agent carried on the developing agent carrier at a downstream side from a facing position of the developing agent carrier and the supply device with respect to a movement direction of the developing agent carrier; and

a second means that prevents the developing agent from accumulating above the layer thickness regulating member when the developing device is mounted in the main casing of the image forming apparatus.

14. A developing device that is detachably attached to a main casing of an image forming apparatus, comprising:

a developing agent container that contains a developing agent;

a developing agent carrier that carries the developing agent;

a supply device that is disposed facing the developing agent carrier and supplies the developing agent stored in the developing agent container to the developing agent carrier, the developing agent carrier and the supply device disposed below the developing agent container when the developing device is mounted in the main casing of the image forming apparatus; and

wherein the developing agent has a packed bulk density of greater than or equal to 0.646 g/ml at an initial use.

15. An image forming apparatus, comprising: /

a main frame; and

a developing unit that is detachably attached to the main frame;

the developing unit comprising:

a developing agent container that contains a developing agent;

a developing agent carrier that carries the developing agent;

a supply device that is disposed facing the developing agent carrier and supplies the developing agent stored in the developing agent container to the developing agent carrier, the developing agent carrier and the supply device disposed below the developing agent container when the developing device is mounted in the main casing of the image forming apparatus; and

a first wall disposed between the developing agent container and the supply device and covers an upper portion of the supply device when the developing device is mounted in the main casing of the image forming apparatus.

16. The image forming apparatus according to claim 15, comprising a plurality of developing agent containers, developing agent carriers, supply devices, and first walls in the same number as a plurality of colors for the developing agent.

17. The image forming apparatus according to claim 16, comprising a plurality of second walls in the same number as a plurality of colors for the developing agent.

18. A developing unit for use with an electrophotographic print device, the developing unit comprising:

a casing having a front wall, a rear wall, a top wall, and a pair of side walls, the casing divided into a toner chamber and a developing chamber;

a first wall extending from the front wall into the casing to create the toner chamber and the developing chamber;

an agitator mounted in the toner chamber;

a supply roller mounted in the developing chamber adjacent to the first wall and the front wall;

a developing roller mounted in the developing chamber to contact the supply roller on a side away from the first wall;

a regulating blade extending from the back wall and in contact with the developing roller; and

a second wall extending from the back wall with a free end contacting the regulating blade at a side opposite where the regulating blade contacts the developing roller, wherein where the second wall is joined to the rear wall is closer to the toner chamber than where the free end of the second wall contacts the regulating blade.

19. The developing unit according to claim 18, wherein the first wall and the front wall form a recessed portion in which the supply roller is completely contained.

20. The developing unit according to claim 19, wherein a plane passing through the axis of the supply roller and the axis of the developing roller forms an acute angle with a vertical plane passing through the axis of the developing roller when the developing unit is mounted in the print device.